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Privatization: Issues at Stake in the Case of China

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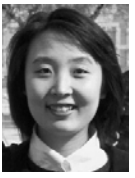

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ABSTRACT

This paper reviews the theory and recent empirical studies on privatization, with a special focus on the efforts made in the case of China. Over the last decade, the Chinese government has initiated major privatizations in an attempt to promote more efficiency and improve the financial and operating performance of state-owned enterprises. Despite the great variation in perspectives and adopted methodology, studies on privatization mainly address the following two questions: why to privatize and how to privatize? Also, there is a huge literature on the post-privatization performance of these firms. While privatization has improved the performance of most SOEs worldwide, our data suggest that it does not work very well in the case of China.

I. INTRODUCTION

Ever since Britain's Thatcher government launched a large-scale privatization program in the early 1980s, skepticism about the government's role in allocating resources has spurred worldwide privatizations, both in developed and in developing countries. By divesting state-owned enterprises (SOEs) at once or selling part of their assets, governments usually wish to promote more efficiency and improve SOEs' financial and operating performance. Despite the great variation in perspectives and adopted methodology, studies on privatization mainly address the following two questions: why to privatize and how to privatize? Also, there is a huge literature on the post-privatization performance of these firms.

This paper reviews the theory and recent empirical studies on privatization, with a special focus on the efforts made in the case of China for the following two reasons. First, China has taken a unique gradual path in reforming its SOEs, rather than implementing a rapid market liberalization and mass privatization as seen in some Eastern European countries. Specifically, the government usually allocates shares to distinct investors categories, such as institutional investors, retail investors and foreign investors, while simultaneously it retains a large stake in most firms at the time of their privatization ('partial privatizations'). This policy has resulted in a unique mixed ownership structure that differs significantly across firms. Second, under the policy of privatizing all but the largest and strategically important SOEs, privatization has had a significant impact on the Chinese economic landscape. By the end of 2003, over 1200 middle- and large-sized SOEs have been privatized through listing (some of) their shares on the Shanghai and Shenzhen stock exchanges. Furthermore, China's entry into the World Trade Organization (WTO) in 2001 may further expedite the pace of privatization in the near future, as domestic firms will have to compete with foreign ones on an equal basis once the domestic market is fully opened. Most of this process will be accomplished by 2007, i.e. within six years after WTO accession. As an example, since 2001 the Chinese government has worked out regulations to further facilitate the transfer of state-owned assets and has established a number of policies loosening foreign ownership restrictions.[1]

This paper is organized as follows. In Section II, we briefly introduce the reform of state-owned enterprises in China. Section III

provides some theoretical arguments on the underlying motives for privatization. Also, we argue that privatization in the case of China typically is only partial and describe the evolution of ownership as of privatization for Chinese SOEs. In Section IV, we present the methods for implementing a privatization program. Section V reviews the empirical studies that examine the performance of newly privatized firms. Also, we discuss the results of our own (preliminary) study on the post-privatization performance of Chinese SOEs. Finally, Section VI concludes our paper.

II. THE REFORM OF STATE-OWNED ENTERPRISES IN CHINA

According to Liu and Gao (1999), the reform of SOEs in China has experienced four stages since the third Plenum of the eleventh Central Committee of the Communist Party of China (CPC) in 1978. The first stage (1979-1983) featured administrative decentralization and profit retention. As part of this restructuring, the management of SOEs obtained some discretion over the production process whereas firms were allowed to retain 3% of their profits. Although the reform more aligned the incentives of managers with those of the government, it also led to the unexpected decline of government revenues when managers started bargaining over the profit sharing rules or even hid profits. To deal with these problems, the government shifted its policy and required SOEs to pay taxes instead of turning in profits directly.

The second stage of the reform (1983-1987) centered on the role of bank loans in financing SOEs. SOEs now did no longer obtain funding directly from the government through budget allocation from financial reserves, but had to borrow from state-owned banks. This policy relieved some of the government's financial burden but inadvertently increased the debt ratio of many SOEs. Average leverage (book value of debt/total assets) of SOEs was as high as 67.9% in 1994 and 65.1% in 1996 (Wu (1997); Sun and Tong (2003)).[2] Also, bad loans at banks rose significantly because a lot of loans were granted to poorly performing companies, which continued to benefit from soft budget constraints.

In the third stage of the reform (1987-1992), the government implemented a Contractual Management System. Managers, as a result, received more freedom in managing the company but also promised to turn in a beforehand-agreed-on amount of taxes. However, the

obligation of the management remained only on the profit side, not on the loss side. In other words, the government continued to assume most of the responsibilities should there be losses. Not surprisingly, these reforms were not able to solve the SOEs' problems of low efficiency and poor financial performance.

The fourth stage of the reform was initiated after the 14th Party Congress in October 1992, targeting the construction of a socialist market economy and the establishment of a modern corporate system. The latter refers to restructuring the SOEs into modern corporations with clearly defined property rights and corresponding ownership structure. In doing so, the state and the local governments started to "corporatize" many SOEs into limited liability firms. The reform also paved the road for private and other forms of ownership in SOEs. Also, under the policy of "seizing the large, releasing the small," which means privatizing all but the largest and strategically important SOEs, many small and weak enterprises have been sold off to employees and other private investors[3] whereas a significant number of medium- and large-sized SOEs were transformed into publicly listed companies. For this purpose, the government established two exchanges, the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) in December 1990 and April 1991, respectively. By the end of 2003, 1287 firms have been listed on these two stock exchanges, most of them being former SOEs.

III. MOTIVES FOR PRIVATIZATION

Privatization, as the term itself indicates, is the process of changing state ownership into private ownership. Privatization goals include the wish to raise revenues for the state, promote wider share ownership, reduce the government's interference in the economy, stimulate economic efficiency and introduce competition to subject SOEs to market discipline (e.g., Price Waterhouse (1989)). These objectives almost always appear in all privatization programs, even though different governments have different priorities in achieving them. These differences likely may help to explain the variation in privatization methods used across countries, which are discussed in Section IV of this paper. Also, as argued by Jenkinson and Ljungqvist (2001), these goals have made share-issuing privatizations fundamentally different from ordinary IPOs. In this section, we discuss the theoretical arguments on

the underlying motives for privatization. Also, we argue that privatization in the case of China typically is only partial and describe the evolution of ownership as of privatization for Chinese SOEs.

According to Megginson and Netter (2001), the economic theory on privatization is the subset of literature on the economics of ownership and the role of governments in allocating resources. Studies on the sources of privatization gains thus primarily center on the comparison between private ownership and state ownership. Different arguments have been developed from the literature on agency relationships (e.g., Jensen and Meckling (1976)) and corporate governance (e.g., Shleifer and Vishny (1997)).

One important argument is that the real owners of the SOE's assets, namely the country's citizens, are unable to write complete contracts with the firm due to their diffuse nature. Shleifer (1998) points out that state ownership fails in motivating managers to innovate, implement cost reductions and/or improve quality. Also, since governments usually have social and political goals other than corporate value maximization, governmental intervention may be detrimental. For instance, the government may transfer the profits of one (sound) company, which could be used to finance the firm's own growth, to help another (distressed) SOE. And for the concern of social stability, the government may require a company to employ more workers than needed. The entry of private ownership through privatization will make government intervention in corporate decisions more difficult or even deter it (Sappington and Stiglitz (1987)).

Other arguments stem from the fundamental theorem of welfare economics that efficiency gains can be achieved through competition. State ownership sometimes deters competition because of the government's wish to protect SOEs against bankruptcy. As an example, the government can try to save state-owned firms from financial distress by offering various forms of financing, such as budgetary subsidies, trade credit via other SOEs with whom the firm trades or loans via state-owned banks, which weaken the financial disciplining from the capital market. These soft budget constraints are considered to be a major impediment to the competitiveness of many SOEs (e.g., Berglof and Roland (1998); Frydman *et al.* (2000); Gao and Shaffer (1998); among others). Gao and Shaffer (1998) point out that bank financing to poorly performing firms is the main form of soft budget constraints in China. Hence, it is expected that part of the efficiency gains produced through privatization will come from reducing soft budget constraints.

Despite a seemingly clear distinction between state ownership and private ownership, staged or partial privatization in which the government does not sell its stake in the firm at once is common practice in China, especially in highly regulated industries (e.g., utilities). As claimed by Jenkinson and Ljungqvist (2001), a staged sale can increase the government's revenue because the initial sale reveals the firm's (true) value and so fewer shares have to be underpriced. Apart from the objective to increase revenues, a partial privatization may be justified for other reasons (see for instance, Sun and Tong (2003); Tian (2001); Mok and Hui (1998); Perotti (1995)). First, state ownership can act as a credible signal that the government will commit to its current privatization policy and will not implement a "re-nationalization" in the future. By making itself a main beneficiary of any improvements in firm value through keeping a large stake in the listed company, the government implicitly commits itself to not arbitrarily changing its policy in the future. Second, in countries where the markets for managerial labor and corporate control are not well developed, the government may be more efficient in monitoring the firm than other (small) investors (e.g., Lin (2000)). Third, in a partial privatization, the government may help firms in terms of policy support when it owns significantly large cash flow rights in the company (Tian (2001); Che (2002)).

The issue of partial privatization is quite important when studying the case of China. Nearly all privatizations of middle- and large-sized SOEs in China so far are partial ones. Under a socialist ideology, the government fears that rapid and massive privatizations may lead to the loss of state-owned assets. As a result, the government assigns priority to reforming its SOEs into modern corporations through widening their ownership structure rather than radically changing the nature of ownership. Bolton (1995), for instance, argues that the strategy of the Chinese government is to improve its SOEs' governance structure rather than fundamentally changing the ownership of production means. The Chinese government actually believes that attracting new owners in its SOEs will improve these firms' corporate governance and therefore promote their efficiency, even when it continues to control them. Xu and Wang (1997), for example, point out that in newly privatized firms, government officials or the SOE's former managers usually occupy most board seats. Interestingly, share-issuing privatizations (SIPs) mainly occur via primary sales, where new funds are raised once the firm becomes listed. At that time, the government

retains its shares in the firm but does not buy new ones in the offering. The government ownership percentage then may further decrease during the years after the SIP when the government chooses to sell its shares to other institutional investors in a private sale or when the government takes cash dividends instead of stock dividends.[4]

Moreover, the ownership structure of a typical publicly listed firm is rather complicated. Apart from the shares owned by the state, there are legal persons' shares owned by domestic institutions,[5] which, like the state shares, are non-tradable in the secondary market, and tradable A shares held by Chinese individuals.[6] End 2002, 60% of total outstanding shares remain non-tradable; state shares represent more than half of these non-tradable shares. As a result, it is impossible to obtain a control stake in most privatized SOEs through purchasing their shares in the secondary market. Not surprisingly, mergers and acquisitions of Chinese listed firms usually are implemented through negotiation with the government and/or the institutional investors who hold large blocks of non-tradable shares.[7] Some companies also have issued employee shares (non-tradable during the lock-up period) and tradable shares that can only be held by foreign investors, such as B shares (first issued in 1992), H shares (first issued in 1993) and N shares. B shares are listed on the two national exchanges, with those listed on the Shanghai stock exchange denominated in U.S. dollars whereas those listed on the Shenzhen stock exchange denominated in Hong Kong dollars. H shares are quoted on the Hong Kong stock exchange and are denominated in Hong Kong dollars. N shares are listed on the New York stock exchange and are denominated in U.S. dollars. By the end of 2003, 111 firms have B shares outstanding and 90 firms have issued H shares. The number of firms listing N shares on NYSE is quite limited. Interestingly, B shares constantly trade at a discount compared to A shares (Chen *et al.* (2001)). Ever since domestic investors were allowed to also trade B shares (i.e. June 2001), the discount on average amounts to 50%. Before that time, the discount was even larger as it amounted to 100% or more.[8]

Table 1 provides some information on the ownership structure of 429 newly privatized firms on the Shanghai stock exchange, based on data collected from the website of Shenyin & Wanguo Securities Company Ltd, a Chinese investment banker. In our sample, we include all non-financial firms with government ownership at the time of privatization. We follow these firms' ownership structure during each of the five years subsequent to privatization, with year 0 being the

privatization year. The table shows that the mean percentage of non-tradable shares amounts to 69.12% in the privatization year and remains as high as 60.46% in the fifth year after privatization. The median percentage of non-tradable shares reveals a similar picture. These observations indicate that the market for corporate control hardly exists in China as it is impossible to take control over a company by launching a hostile bid in the secondary market. Overall, the decrease in the percentage of non-tradable shares over time is due to the fact that firms issue new (tradable) shares to the public after their IPO. Government ownership on average represents more than 50% of total shares in the year of privatization, but the mean percentage of government shares gradually falls over the years to 37.65% in year 5. Also, as the median government ownership percentage remains above 50% until year 3, the Chinese government still controls more than half of all privatized companies two years after privatization. Nevertheless, a standard deviation of more than 20% in each of the years after privatization shows that government ownership varies significantly across firms. Next, the mean and median percentages of legal persons' shares are constantly on the rise over the years, to 21.45%, respectively 14.26% in year 5 after privatization. Moreover, there is a notable upward trend in the percentage of A shares. On average, the percentage of A shares amounts to 35.42% in year 5, compared to 29.01% in the privatization year; this change is even more pronounced when examining the median percentage of A shares. The average percentage of B shares is rather small (amounting to 1.18% in the privatization year and 2.30% in year 5), but this is due to the fact that only a limited number of firms have B shares outstanding. Indeed, when considering only the firms with a positive number of B shares in our sample (16 firms), we observe that the mean percentage of B shares is 31.72% in the privatization year, which slightly increases to 32.72% in year 5 after privatization. Overall, the figures in Table 1 reveal that even five years after privatization, the interests of managers in publicly Chinese listed firms remain largely aligned with those of the government and – to a smaller extent – institutional investors than with small retail investors.

IV. HOW TO PRIVATIZE?

According to Brada (1996), there are four main privatization methods, including mass or voucher privatization, privatization from below,

TABLE 1
Ownership structure according to privatization year of the SOE

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
% non-tradable shares						
Mean	0.6912	0.6827	0.6737	0.6344	0.6265	0.6046
Median	0.7001	0.6995	0.6909	0.6475	0.6316	0.6103
Standard deviation	0.0798	0.0776	0.0823	0.0996	0.0998	0.1099
% government shares						
Mean	0.5234	0.5019	0.4542	0.4162	0.3954	0.3765
Median	0.5882	0.5700	0.5178	0.4849	0.4563	0.4201
Standard deviation	0.1974	0.2153	0.2366	0.2472	0.2464	0.2347
% legal persons' shares						
Mean	0.1322	0.1491	0.1810	0.2028	0.2145	0.2145
Median	0.0490	0.0602	0.0932	0.1108	0.1205	0.1426
Standard deviation	0.1725	0.1903	0.2150	0.2317	0.2379	0.2261
% A shares						
Mean	0.2901	0.2962	0.3035	0.3377	0.3406	0.3542
Median	0.2860	0.2920	0.2980	0.3310	0.3310	0.3681
Standard deviation	0.0976	0.0953	0.0978	0.1218	0.1263	0.1392
% B shares						
Mean	0.0118	0.0131	0.0152	0.0189	0.0195	0.0230
Median	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Standard deviation	0.0622	0.0649	0.0709	0.0787	0.0796	0.0886
% B shares if positive (N=16)						
Mean	0.3172	0.3137	0.3158	0.3158	0.3134	0.3272
Median	0.3193	0.3193	0.3121	0.3121	0.3292	0.3324
Standard deviation	0.0843	0.0814	0.0996	0.0996	0.1001	0.1108
Number of observations	429	383	333	267	241	199

property reinstitution and the sale of state property. Mass or voucher privatization enables eligible citizens to bid for the shares in a SOE or other privatized assets with vouchers that are distributed for free or at a low cost. So far, this method has only been used in Central and Eastern Europe. Privatization from below involves setting up new private businesses by domestic or foreign entrepreneurs so as to foster the growth of the private sector. Property reinstitution is the return of property to its original owners or their heirs. The latter method does

not occur much as it is often hard to identify the original owners, except for the case of real estate. The commonly adopted approach in most countries, including China, is to sell state property through either introducing the SOE's shares on a public capital market (a Share-Issuing Privatization or SIP) or selling the SOE's assets to a smaller group of investors, mostly another industrial firm, through a private placement (a direct asset sale).

Recent studies have investigated the terms of privatization, examining the motives behind and the consequences of using different privatization methods. These decisions include pricing and share offering methods and the allocation of shares to non-state investors. An important issue in this respect is whether or not foreign investors are allowed to participate in the privatization program. The latter issue is particularly relevant for some developing countries, including China, that have greatly benefited from FDI under the form of joint ventures and green field investments, but still remain cautious about allowing foreign investors to participate in the privatization of their SOEs.[9] Finally, Jones *et al.* (1999) point out that in implementing a SIP, the choice of pricing and offering methods and the allocation of shares are interrelated decisions that governments make in order to satisfy both economic and political goals.

A. *Share-issuing privatization (SIP) versus direct asset sale*

Megginson *et al.* (2000) examine the choice between a SIP and a direct asset sale using data on 767 public share-issuing privatizations and 1225 direct asset sales in 92 countries (excluding China). They argue that the degree of market development, the level of income inequality, the legal and political environment and firm-specific factors all influence this choice. In addition to a descriptive analysis, they also build a logistic regression model to explore the relations between these factors and the choice of privatization method. Specifically, the market turnover ratio (total value of the shares traded in the country each year divided by market capitalization) serves as a proxy for the degree of capital market development whereas GNP per capita is a proxy for economic development. Megginson *et al.* find the probability of a SIP to be higher in countries with a lower market turnover ratio, respectively GNP per capita, which they interpret as evidence that SIPs may intentionally be used to stimulate the development of (immature) capital markets. The Gini-index, which measures

the skewness of the income distribution, is used to capture the level of income inequality. Megginson *et al.* find a negative relation between this Gini-index and the probability of a SIP, which confirms their hypothesis that governments have to underprice a SIP more in countries with higher income inequality in order to get the SOE's shares placed, thereby increasing the relative cost of a SIP. Next, they construct four variables to measure the extent to which private property and small shareholders' interests are protected. These variables include the Henisz index (measures the ability of the government to credibly commit to its policy), the property rights index (measures the degree to which the property rights of private investors are protected by the country's laws), the rule of law variable (measures the extent to which the laws are actually enforced) and the shareholder rights index (measures legal protection of minority shareholders). Megginson *et al.* find significantly negative relations between the first three variables and the probability of a SIP, suggesting that a government that is able to show strong policy commitment and protects property rights is more likely to attract buyers in a private asset sale; the shareholder rights index is not significant in any of the regressions. Finally, as far as the firm-specific factors are concerned, Megginson *et al.* use the log of the offering size, the return on sales (ROS) of the SOE and a dummy variable that indicates whether or not the firm is in a strategic industry. Their results show that there is a significantly positive relation between offering size, respectively ROS and the probability of a SIP. The dummy variable capturing firms in strategic industries has no impact on the choice of privatization method.

So far, no study has explored the determinants of the choice between a SIP and a direct asset sale in Chinese privatizations. Nevertheless, as the Chinese Securities Regulatory Commission (CSRC) strictly controls the yearly number of firms becoming listed on the stock market, only relatively profitable firms of large and medium size are entitled to list their shares, which is consistent with the findings of Megginson *et al.* (2000).

B. *The pricing and offering method*

The pricing and offering method used are essential to the success of a privatization program, such as whether the program will be accepted and accomplish the intended objectives. Prior research on this topic mostly concentrates on the determinants of underpricing (initial return)

and the offering method used in a SIP. Jones *et al.* (1999), for example, compare the determinants of underpricing in a SIP to those in an ordinary IPO using data on 630 SIPs from 59 countries, including China, over the period 1977-1997. They argue that the asymmetric information problem faced by investors in a SIP is even more serious than that in an ordinary IPO. Specifically, investors in a SIP are also largely concerned about whether the government will stick to its policy in the future. In general, their study is based on the model of Perotti (1995). Perotti argues that a committed government would first divest a small portion of its shares at a small discount in order to signal to the public that it would bear most of the redistribution risk should any policy changes happen in the future. When the future political uncertainty is high, this committed government should sell a larger fraction, but with sufficient underpricing to discriminate itself from the populistic government, which can change its policy easily and cares more about proceeds maximization. In addition, governments tend to sell shares at a larger discount when they wish to involve a particular investor group – e.g., the middle class – in the privatization program so as to gain wide support for the reform. In subsequent (seasoned) equity offerings or for politically less important groups, such as institutional investors and foreign investors,[10] governments are more likely to use bookbuilding or auctions to maximize their proceeds.

From a descriptive analysis of their sample, Jones *et al.* (1999) conclude that offering terms and share allocation in a SIP indeed reflect the political considerations of governments. Domestic investors and employees usually enjoy preferential share allocation at fixed and discounted prices. Also, to shed more light on the determinants of underpricing in a SIP and to verify Perotti's hypotheses, Jones *et al.* build a simultaneous equations model on a sample of 93 SIPs to explore the link between initial returns (the difference between the issue price and the closing price on the first trading day divided by the issue price) and the percentage of capital divested. Given that the link between the initial return and the percentage of capital divested may be endogenous, depending on the investors' demand as well as the government's supply, they estimate one "demand" and one "supply" equation. Both regressions take the initial return as the dependent variable and have some common explanatory variables, including the percentage of capital divested, an index of economic freedom and the (log) value of the privatized firm. In the demand equation, they also include the Gini-index to measure income inequality and a dummy variable that equals

one when more than 50% of the shares are sold in the SIP (control transfer). In the supply equation, Jones *et al.* include government expenditures and deficit as a percentage of GDP, the percentage of the offering allocated to foreign investors, respectively employees and some other control variables, such as dummy variables indicating whether the SIP is the first privatization in the country, whether it is an offering in the U.K., etc. Generally speaking, the demand equation is designed to reflect investor preferences, which are assumed similar across countries. The supply equation is expected to reveal the different pricing strategies and political considerations across different types of government.

Jones *et al.*'s findings are generally consistent with the predictions of Perotti's model. Specifically, they find that in the demand equation, the percentage of capital divested is significantly positively related to underpricing. So, governments that wish to sell a larger fraction of their shares incur a larger discount. As argued by Perroti (1995), the willingness of governments to underprice serves as a commitment device to the public. The coefficient of the economic freedom index is positive, which shows that investors need to be compensated more if there is a lot of government intervention. Moreover, the positive relation between the Gini-index and the initial return implies that higher discounts are required in countries with higher income inequality (see also Megginson *et al.* (2000)). The coefficient of the control transfer dummy variable is significantly negative, indicating that investors need less underpricing if the risk of a future policy change is smaller. As far as the supply equation is concerned, the coefficient of the percentage of capital divested is not significant, probably because pricing strategies are mixed across different types of governments. The coefficients of the index of economic freedom and government expenditures as a percentage of GDP are significantly negative, confirming that populistic governments, that wish to maximize their proceeds, are reluctant to underprice the issue. Also, the deficit as a percentage of GDP is used to discriminate between governments that run on high expenditures because of a deficit and governments that are really populistic (control variable). Next, the percentage of shares allocated to either foreign investors or employees does not affect the initial return, which is contrary to the expectations that domestic investors are compensated for their smaller allotment of shares in successful SIPs and that underpricing should be higher to attract more employees. Interestingly, and unlike in ordinary IPOs,

the value of the privatized firm, which is used as an inverse proxy for information asymmetries, has no impact on the magnitude of underpricing. In their multivariate analysis on the determinants of underpricing, Jones *et al.* only use data from some developed countries, as their data on developing countries are not complete. As a result, their findings cannot be easily extrapolated to developing countries, including China.

Mok and Hui (1998) examine the determinants of underpricing in the Chinese market using data on 109 firms over the period 1990-1993, including 87 A-share IPOs and 22 B-share IPOs. Simultaneously, they shed some light on the causes of differential pricing of A and B shares. First, they claim that domestic investors usually consider a large government ownership stake after the IPO as a guarantee that the government will further support the privatized firm. Foreign investors, however, deem such a large stake as a bad signal as they are more concerned about the inefficiencies associated with possible state interventions. Therefore, the higher the percentage of shares kept by the government, the better the first-day after-market performance (and thus the perceived underpricing) of A shares, and vice versa for B shares.[11] Second, they claim that information asymmetries are more serious for domestic investors than for foreign investors, due to the immaturity of the Chinese stock market. The legal protection of minority shareholders was so weak, especially during the first few years after stock markets were established, and domestic investors only had limited access to company information. By contrast, and in compliance with international accounting standards, the B-share prospectus contained more elaborate company information for foreign investors.

Consistent with the above arguments, the ex ante risk of the issue, measured by the amount of new funds raised, has a larger positive impact on the underpricing of A shares than on B shares. Also, the time period between the offering and the listing of shares usually is long in China, which might further increase the required underpricing by adding to the ex ante risk of the issue.[12] Mok and Hui find a significantly positive link between the length of this period and underpricing for A-share IPOs, while the relation is significantly negative for B-share IPOs. Furthermore, they find that the cumulative abnormal returns of underpriced IPOs are negative for an extended period after the first trading day. This finding could be the result of a fledgling market, as they argue. Nevertheless, their study suffers from a serious weakness as they fail to recognize that the magnitude of underpricing

is determined by the discretion of the government as well as investor perceptions. Also, their findings are based on data from the first years after Chinese stock markets were established and therefore cannot be easily extrapolated to current years. For instance, the time period between the offering and listing of A shares has been shortened substantially and the information disclosure to domestic investors has been greatly improved.

Chan *et al.* (2004) is a more recent paper examining the underpricing of IPOs in China. Their data set includes all A-share IPOs from 1993 to 1998 and B-share IPOs from 1995 to 1998. The average underpricing in their sample amounts to 177.8% for A-share IPOs and only 11.6% for B-share IPOs. This underpricing is not much lower after adjusting for market movements. They argue that some institutional factors, including the fairly long time period between share offering and listing, the control by CSRC on the maximum number of shares per IPO and the geographic distribution of share issue quotas by CSRC, and the percentage of non-tradable shares determine the magnitude of underpricing in Chinese IPOs. As Mok and Hui (1998), they predict a positive relation between the time period between the offering and listing of shares on the one hand and underpricing on the other. They also expect that A-share IPOs show better first-day returns when the number of shares offered is limited; the reason is that domestic investors have only limited investment opportunities and therefore are more anxious to buy shares on the first day when only few are available. Next, as the CSRC installs issue quotas per region, thereby benefiting firms in relatively under-developed areas to go public, Chan *et al.* expect that firms going public in less developed areas will realize lower first-day returns. Using the number of retail investors in the area where the listed firm comes from as a proxy for local economic development, they predict a positive relation between this variable and underpricing. Finally, consistent with Mok and Hui (1998), they argue that the percentage of non-tradable shares, i.e. government and legal persons' shares, has an impact on underpricing. But unlike Mok and Hui (1998), they predict that even domestic investors consider this as a signal of inefficiency, and therefore lower first-day returns. Consistent with their arguments, they find that the underpricing of A-share IPOs is significantly positively related to the number of days between offering and listing and the number of investors in the area of the IPO company, but significantly negatively related to the number of shares being listed and the percentage of non-tradable shares. The

underpricing of B-share IPOs, however, cannot be explained by any of these variables. Finally, they also compare the magnitude of underpricing before and after 1999, when the CSRC allowed firms and underwriters to set a range for the offering price instead of using a fixed price. The underpricing of A-share IPOs has decreased significantly ever since, averaging to 107.5%. The latter results are consistent with Jenkinson and Ljungqvist (2001), who point out that using different pricing strategies can help to reduce underpricing. Moreover, in order to decrease the underpricing while accommodating the target group, Jenkinson and Ljungqvist (2001) stress that it might be optimal to split the offering into multiple tranches aimed at different investor groups using a different pricing strategy. For instance, the total offering can be divided into an institutional tranche that is marketed using bookbuilding or auction methods and a retail tranche that is sold at a fixed price. Chan *et al*. (2004), however, do not examine this issue.

C. *Share allocation to domestic versus foreign investors*

In 2002, the Chinese government released two important rules allowing foreign investors to participate in the takeovers of and mergers with Chinese listed firms on the one hand and to buy non-tradable state-owned and legal persons' shares of listed SOEs on the other hand. These shares can be sold through an auction, but will remain non-tradable in the secondary market. These activities, however, are still subject to the Foreign Investment Guidance, which stipulates the industries that welcome foreign capital, the industries where a Chinese partner must hold a controlling stake and the industries that are barred from foreign investment. This raises questions regarding the motivation(s) and the consequences of selling shares to foreign investors in Chinese firms.

Bortolotti *et al.* (2000) examine why governments may want to sell shares to foreign investors through listing abroad or cross-listing the shares in newly privatized firms by examining 392 SIPs in 42 countries over the period 1977-2000. Unfortunately, as they exclude transition and socialist economies, their sample does not cover China. They find that governments are more likely to list abroad the shares of firms in industries exposed to global competition (e.g., telecom firms) in order to subject them to the discipline of international capital markets. Also, governments use listing abroad and cross-listing as a way to promote trade with foreign countries. Governments in

developing countries may resort to other markets that are more liquid and investor-protection oriented to obtain a better price for their shares. Also, the fact of being listed on such a market itself adds to the reputation of the firm.

The existing literature on China does not elaborate on why the Chinese government may want to sell shares to foreign investors, except that it may wish to attract foreign capital to finance and restructure its SOEs. But according to the results of some studies, which are discussed in Section V of this paper, foreign investors do not have an influence on the performance of Chinese listed firms. Qi *et al.* (2000) and Sun and Tong (2003) attribute this to foreign investors owning only a minority stake in newly privatized SOEs, at least when compared to the ownership percentage held by the state and institutional investors. Also, foreign investors usually are of diffuse nature and do not hold enough board seats to influence the firm's strategy. Their influence, however, may increase in the future, now that foreign ownership restrictions have been loosened.

V. EMPIRICAL STUDIES ON THE PERFORMANCE OF NEWLY PRIVATIZED FIRMS

When launching a privatization program, governments usually expect it to improve the SOEs' financial and operating performance. Therefore, the finance literature has paid a great deal of attention to the question whether privatization indeed accomplishes these goals. In this section, we briefly review the empirical studies that examine the financial and operating changes at the firm level. Two representative papers are Megginson *et al.* (1994) and Boubakri and Cosset (1998). Both studies employ a large multi-country and multi-industry database, thereby overcoming the small-sample selection bias of earlier studies (e.g., Pryke (1982); Yarrow (1986)). Thereafter, we discuss studies that examine the post-privatization performance of Chinese SOEs. Table 2 summarizes the empirical findings. We end this section by discussing the results of our own (preliminary) study on the post-privatization performance of recent Chinese SOEs.

Megginson *et al.* (1994) compare the pre- and post-privatization performance of 61 firms from 18 countries and 32 industries that experience full or partial privatization during the period 1961-1990. They conjecture that privatization has a *positive* impact on profitability,

operating efficiency, capital investment spending, and a *negative* effect on financial leverage and employment. To test their predictions, they compute firm-level proxy variables for a period of three years before until three years after privatization. Using a Wilcoxon signed-rank test and proportion test, they find that profitability (measured as return on sales and return on assets), operating efficiency (real sales per employee, net income per employee) and capital investment spending (capital expenditures divided by sales, respectively total assets) increase significantly both in economic and statistical terms after privatization whereas financial leverage (total debt to total assets) decreases. Nevertheless, contrary to the expectation that privatization leads to massive job losses, they find that in 64% of the newly privatized firms, employment actually increases over the studied window. Also, they conclude that especially the firms that experience the largest changes in ownership structure (i.e. the government divests more than 50% of its shares) exhibit the biggest performance improvements.

Taking into account the differences between developing and developed countries, such as the extent to which capital markets are developed, differences in GDP, development status of the private sector, which all can affect the success of a privatization program, Boubakri and Cosset (1998) extend the study of Megginson *et al.* (1994) by focusing exclusively on privatization in developing countries. Their sample covers 79 firms from 21 developing countries – unfortunately, China is not included – over the period 1980-1992. Using a similar methodology as in Megginson *et al.* (1994) based on accounting performance measures,[13] they conclude that privatization in developing countries also significantly increases profitability, operating efficiency and capital investment spending. The decline in the leverage ratio, however, is only significant when using the unadjusted measure (and including those firms experiencing a pre-privatization debt restructuring).

Chen *et al.* (2002) is among the first studies that investigate Chinese privatizations using the same univariate methodology as Megginson *et al.* (1994) and Boubakri and Cosset (1998). Their database includes financial statements data (sales, profits, total assets, total debt, long-term debt, shareholder's equity and capital expenditures) and ownership information on 735 privatized firms listed on the Shanghai and Shenzhen stock exchanges over the period 1991-1997. Surprisingly, the authors conclude that although capital expenditures increase and leverage decreases after privatization, the performance of Chinese

SOEs actually deteriorates within three years after privatization. They attribute this performance deterioration rarely seen in other countries to the fact that the government still holds a large stake in most of the companies after their privatization. They link their results to ownership structure by implementing univariate comparisons of subsamples, split on the basis of the percentage of shares held by the state, legal persons, respectively domestic retail investors and on the presence of foreign owners. In addition, they implement a multivariate analysis to examine the determinants of performance changes, changes in investment spending and debt ratios. Specifically, they regress changes in these variables on the percentage change in GNP, the percentage of shares held by the state, institutional and retail investors after privatization, a dummy variable for foreign ownership and some control variables including firm size, a dummy for the exchange and industry dummy variables. They find weak evidence that state ownership negatively impacts performance and capital expenditures whereas foreign ownership increases capital expenditures, but reduces leverage. However, they find no relation between the other owner categories (legal persons and domestic individuals) and performance.

A highly related paper is that of Xu and Wang (1997), who examine the effects of ownership concentration and ownership structure on the value and performance of Chinese listed firms during 1993-1995. Xu and Wang regress the firm's market-to-book ratio, return on equity, respectively return on sales on ownership concentration (the ownership percentage and the Herfindahl index[14] of the ten most important shareholders) and ownership mix (the fraction of shares held by the state, legal persons and small domestic investors). They report a positive relation between ownership concentration and corporate value, respectively profitability. Also, from examining the link between the various ownership types and value, respectively performance in more detail, Xu and Wang conclude that legal persons' ownership positively affects whereas state ownership negatively affects value and profitability. The percentage of shares held by small domestic investors does not have an impact on return on equity or return on sales, but is significantly negatively related to firm value.

The regression approach of Xu and Wang (1997) has been widely adopted in subsequent studies, which differ in sample and empirical proxies used to measure financial and operating performance. These papers also explore the role of foreign investors, via the B shareholdings. Qi *et al.* (2000), for instance, expand the sample to Chinese

listed firms over the period 1991-1996. Consistent with Xu and Wang (1997), they find that legal persons positively affect performance whereas state ownership has a detrimental impact. Domestic investors and foreign investors have no influence. The authors argue that legal persons hold large blocks of shares and therefore have both the incentives and the expertise to monitor firm management. Conversely, small domestic and foreign shareholders are of diffuse nature and therefore lack the incentives and capability of monitoring. These explanations are consistent with arguments from the corporate governance literature (e.g., Grossman and Hart (1980); Shleifer and Vishny (1986)). Tian (2001) is the only paper up till now that lends some support to the argument that state ownership may actually be beneficial to the firm as he discovers a quadratic relation between state ownership and performance. Specifically, when the government's cash flow rights are relatively small, the incentives of fulfilling some social objectives at the expense of value maximization are higher. However, when these cash flow rights are sufficiently large, firms perform better, indicating that the government may have more incentives to monitor the firm and/or help it. Also, what is distinct about this study is that Tian is the first to recognize that privatization is an endogenous process that may affect the conclusions of studies on post-privatization performance. As an example, the negative relation between state ownership and performance might be spurious when the government tends to keep more shares in poorly performing SOEs. Therefore, he regresses the change in government ownership at SIP-time on the firm's previous-year ROA and industry-level control variables, but finds no evidence that government divestment is related to firm profitability.

Sun and Tong (2003) is another notable exception that recognizes the endogeneity problem; their sample includes 634 privatized (listed) firms on the Shanghai and Shenzhen stock exchanges over the period 1994-1998.[15] They find that although real sales, earnings and employee productivity improve up to three years after privatization, profitability (return on sales, earnings on sales) actually declines. Overall, the performance of Chinese privatized firms is not as good as would be expected from the experience of other countries, which confirms the findings of Chen *et al.* (2002). Also, their findings largely confirm the positive effect of legal persons' ownership and the negative effect of state ownership on firm value and performance. Furthermore, they document a positive relation between foreign ownership

and firm market value while they find no relation with operating performance. Finally, Sun and Tong check for the possibility that the profitability of the SOE before privatization might have an impact on the number of shares the government retains after privatization. For this purpose, they implement a cross-sectional regression analysis to examine whether accounting profitability (the three-year average accounting profits before privatization) affects the government's decision of how much shares to retain. The latter variable is measured by two proxies: the proportion of state ownership upon public listing and the three-year average of state ownership after listing. However, they find no relation between the two examined variables, meaning that they are unable to (partly) model the endogeneity of the privatization process. Also, in a logistic regression model that estimates the likelihood of selling shares to foreign investors, they find no relation between accounting profitability and the dependent variable.

The final section of this paper will shed a more recent and more rigorous light on how privatization impacts on the performance of SOEs in China. Also, we extend the window to five years after privatization whereas previous studies limited their observation period to three years. For this purpose, we use data on a sample of listed firms on the Shanghai stock exchange over the period 1994-2002. Only non-financial firms where the government owns a stake at the time of the SIP are included in our sample. As many firms are restructured before going public – e.g., their unproductive parts are spun off – comparing the pre- and post-privatization performance of a sample that still includes these firms is not so meaningful. To reduce this problem, we calculate the growth rate in total assets from one year before to the year of privatization, and drop the firms with extreme growth rates; using the 5% and 95% percentile value turned out to be sufficient for this purpose. Next, to reduce the impact of extreme values on our results, we winsorize all accounting ratios at the 5%-95% percentile.

The performance ratios we examine include return on sales (net income/sales), return on assets (net income/total assets) and return on equity (net income/book value of equity). In addition, we investigate leverage (book value of debt/total assets), financial debt/total debt, short-term (<1 year) debt/total debt, fixed assets/total assets, capital expenditures/total assets, inventories/total assets and cash and marketable securities/total assets. Unfortunately, we are not able to examine the ratios real sales/employees and net income/employees – which are examined in Megginson *et al.* (1994) and Boubakri and

TABLE 2

Summary of empirical studies on the performance of newly privatized companies

Study	Sample description, study period, and methodology	Summary of empirical findings
Megginson *et al.* (1994)	They conduct a Wilcoxon signed-rank test and proportion test on accounting measures of 61 privatized firms during the period 1961-1990 to examine the financial and operating performance changes of these firms three years before to three years after privatization. Chinese firms are not included.	Profitability, operating efficiency and capital investment spending rise significantly after privatization. The leverage ratio declines. Employment increases in 64% of the privatized firms. Also, firms experiencing large changes in their ownership structure display larger improvements in their performance.
Boubakri and Cosset (1998)	They conduct a Wilcoxon signed-rank test and proprotion test on crude and adjusted accounting measures of 79 privatized firms from 21 developing countries during the period 1980-1992 to examine the financial and operating performance changes of these firms three years before to three years after privatization. Chinese firms are not included.	Profitability, operating efficiency and capital investment spending, dividends and employment rise significantly after privatization, using both crude and market condition adjusted measures. The leverage ratio decline is only significant when the effect of pre-privatization debt restructurings is not accounted for.
Chen *et al.* (2002)	They implement both a univariate and multivariate analysis on financial data (profits, sales, total assets, capital expenditures, total debt, long-term debt, shareholders' equity, and share ownership) of 735 privatized firms listed on the two major Chinese stock markets over the period 1991-1997 to examine the performance changes as well as their determinants.	Both the operating and financial performance deteriorate after the privatization. There is weak evidence that state ownership negatively impacts performance and capital expenditures whereas foreign ownership increases capital expenditures but reduces the debt ratio. There is no relation between the other owner categories, including legal persons and retail investors, and performance.

Study	Sample description, study period, and methodology	Summary of empirical findings
Xu and Wang (1997)	They regress firm performance measures on ownership measures of Chinese listed firms during the period 1995-1995.	There is a positive relation between ownership concentration and corporate value and profitability. Also, value and profitability are positively related to legal persons' ownership, negatively related to state ownership. Ownership by retail investors is not related to profitability, but is significantly negatively related to firm value.
Qi *et al.* (2000)	They take the same regression approach as Xu and Wang (1997) on Chinese listed firms over the period 1991-1996 to explore the relation between ownership and performance	The ownership of legal persons positively affects whereas state ownership negatively affects firm performance. Domestic investors and foreign investors have no impact on performance.
Tian (2001)	He uses a similar regression approach as Xu and Wang (1997) on the performance data of 826 Chinese listed firms to examine the role of state ownership.	There is a quadratic relation between state ownership and firm performance. When the government's cash flow rights are relatively small, the rent expropriation effect dominates. However, when cash flow rights become sufficiently large, performance improves, indicating that the government may have more incentives to monitor or help the SOE. There is no evidence that the change in government ownership is related to the SOE's prior profitability.

Study	Sample description, study period, and methodology	Summary of empirical findings
Sun and Tong (2003)	They implement both a univariate analysis and multivariate analysis on accounting measures of 634 Chinese listed firms after 1994 to examine the performance changes as well as the impact of ownership. Also, there is cross sectional analysis to explore the impact of government's decision on the observed performance changes.	Earnings, real sales and employee productivity improve up to three years after privatization, but the return on sales and earnings on sales actually decline. Also, legal persons positively influence whereas state ownership negatively impacts firm value and performance. Foreign ownership has no impact on operating performance, but has a positive impact on market value. Finally, there is no relation between pre- privatization accounting measures and the government's percentage of shares kept, respectively the decision to involve foreigners in the firm's ownership structure.

Cosset (1998) – since data on the number of employees are not available.

The results in Table 3 suggest that the post-privatization performance of (partially) privatized Chinese SOEs deteriorates, which is consistent with the conclusions from earlier studies on Chinese privatizations. All profitability ratios decline significantly from the year before to five years after privatization, with mean ROS dropping from 13.09% to 7.57%, mean ROA from 8.53% to 3.16% and mean ROE from 20.28% to 7.24%. As profitability before privatization is largely stable over time, it can be concluded that the decrease as of privatization is driven by the event we study. As Chinese SOEs usually raise new equity at privatization time, ROA and ROE may be negatively affected (when new funds are not instantly invested or do not pay off immediately); however, as ROS also decreases and as ROA and ROE decrease during each of the post-privatization years, we can safely decide that our conclusions on privatization negatively affecting performance are not spurious.

The mean leverage declines slightly in the years before privatization, but plummets from 55.65% in the year before to 39.03% in the year of privatization. This decline is even more pronounced for the median debt ratio. After the event, mean and median leverage start to rise again during each of the studied years and reach 49.74%, respectively 49.67% in the fifth year after privatization. The latter results contrast with the findings of Chen *et al.* (2002), who find that debt ratios of Chinese SOEs decrease after privatization during the period 1991-1997. The trend in the fraction of financial debt (bank loans)[16] relative to total debt is less clear-cut. On average, this ratio is increasing over the years – from 46.10% in the third year before to 52.44% in the fifth year after privatization – but this trend is clearly disrupted in the privatization year. Perhaps, access to bank loans becomes easier after privatization as stock market listing allows firms to strengthen their equity base. Finally, the mean and median percentage of short-term debt to total debt increase at the event of privatization and these patterns are even continued during the next five years. The ratio of short-term to total debt is extremely high over the years, averaging 77.86% in the year before and 82.32% five years after privatization.

Finally, the asset side of the balance sheet reveals that the average percentage of fixed assets to total assets drops significantly at privatization, from 39.83% to 33.00%; this drop is even more obvious when examining the median percentage. In the years afterwards, firms build

up their stock of fixed assets again. When examining the firm's capital expenditures, we see that investment percentages do not vary greatly from year to year (even though the percentage is somewhat lower five years after privatization). This result likely indicates that the large decrease in fixed assets at privatization is due to firms raising equity while not immediately investing all funds at SIP-time. Finally, we observe that the event of privatization increases the efficiency of inventory management: at the time of privatization, inventories on average decrease from 17.35% to 12.55% of total assets and firms more or less stick to this percentage during subsequent years. Cash and marketable securities increase significantly at the event of privatization, from 9.86% to 23.47%, but cash holdings seem to be cut down during each of the years afterwards.

We now report and discuss the results from a multivariate analysis on post-privatization performance using the above sample in order to explore the driving forces behind performance deterioration in Chinese privatized SOEs. In this analysis, we are particularly interested in how different types of ownership affect post-privatization performance. Unlike previous studies, we condition our analysis on the number of years after privatization. For this purpose, we examine ROS in Table 4, considering both the determinants of the absolute ratio in a particular post-privatization year and the determinants of its change as of privatization. We also report results for ROA (Table 5) and ROE (Table 6), but as the firm's financing decisions may influence these ratios (e.g., the decision to issue seasoned equity enlarges total assets and equity), we do not largely focus on these performance measures.[17] The model for every year after privatization looks as follows:

$$PR_t = \alpha_t + \beta_1 \text{ state} + \beta_2 \text{ Ashare} + \beta_3 \text{ foreign} + \beta_4 \text{ size} + \beta_5 \text{ leverage} + \beta_6 \text{ findebt} + \beta_7 \text{ shortdebt} + \beta_8 \text{ fixassets} + \beta_9 \text{ cash} + \beta_{10} \text{ regulated} + \beta_9 \text{ GDP} + e_t;$$

$$\Delta PR_t = \alpha_t + \beta_1 \Delta\text{state} + \beta_2 \Delta\text{Ashare} + \beta_3 \text{ foreign} + \beta_4 \text{ size} + \beta_5 \Delta\text{leverage} + \beta_6 \Delta\text{findebt} + \beta_7 \Delta\text{shortdebt} + \beta_8 \Delta\text{fixassets} + \beta_9 \Delta\text{cash} + \beta_{10} \text{ regulated} + \beta_9 \text{ GDP} + e_t$$

where *PR* indicates the performance ratio, *state* is the government ownership percentage,[18] *Ashare* is the retail ownership percentage, *foreign* is a dummy for the presence of a foreign owner (foreign founder or tradable B, H shareholder), *size* is the natural logarithm of total assets, *leverage* is book value of debt/total assets, *findebt* is finan-

TABLE 3

Descriptive statistics on performance, financial and asset structure for 429 Chinese SOEs at the event of privatization (year 0).

	Year -3	Year -2	Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Return on sales									
Mean	0.1273	0.1328	0.1309	0.1385	0.1352	0.1162	0.1003	0.0898	0.0757
Median	0.1003	0.1087	0.1116	0.1146	0.1072	0.0899	0.0774	0.0666	0.0509
Standard deviation	0.0914	0.0901	0.0853	0.0934	0.1055	0.0978	0.0912	0.0920	0.0804
Number of observations	267	290	360	388	346	306	242	217	179
Return on assets									
Mean	0.0818	0.0862	0.0853	0.0616	0.0604	0.0490	0.0428	0.0367	0.0316
Median	0.0742	0.0808	0.0825	0.0588	0.0594	0.0461	0.0397	0.0358	0.0286
Standard deviation	0.0424	0.0383	0.0372	0.0308	0.0370	0.0343	0.0348	0.0320	0.0313
Number of observations	240	282	357	389	348	308	244	217	181
Return on equity									
Mean	0.2094	0.2145	0.2028	0.1026	0.1056	0.0864	0.0772	0.0764	0.0724
Median	0.1934	0.2001	0.1985	0.1008	0.1023	0.0832	0.0763	0.0713	0.0624
Standard deviation	0.0989	0.0888	0.0875	0.0518	0.0647	0.0578	0.0564	0.0639	0.0730
Number of observations	237	279	355	389	348	308	244	217	181
Leverage									
*Me*an	0.5991	0.5877	0.5565	0.3903	0.4198	0.4338	0.4507	0.4729	0.4974
Median	0.6296	0.6223	0.5861	0.3796	0.4162	0.4233	0.4521	0.4699	0.4967
Standard deviation	0.1383	0.1345	0.1361	0.1399	0.1505	0.1555	0.1615	0.1720	0.1723
Number of observations	241	322	376	390	348	308	244	217	181

	Year -3	Year -2	Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Financial debt/total debt									
Mean	0.4610	0.4702	0.4874	0.4693	0.4703	0.4923	0.5145	0.5002	0.5244
Median	0.4800	0.4969	0.5227	0.5073	0.4969	0.5231	0.5401	0.5365	0.5665
Standard deviation	0.2345	0.2262	0.2237	0.2285	0.2243	0.2255	0.2195	0.2151	0.2130
Number of observations	242	323	378	390	348	308	244	217	181
Short-term debt/total debt									
Mean	0.7780	0.7775	0.7786	0.7946	0.8098	0.8185	0.8191	0.8314	0.8232
Median	0.8247	0.8232	0.8085	0.8356	0.8625	0.8714	0.8803	0.8852	0.8823
Standard deviation	0.1995	0.1932	0.1880	0.1829	0.1818	0.1804	0.1876	0.1819	0.1841
Number of observations	242	323	378	390	348	308	244	217	181
Fixed assets/total assets									
Mean	0.4035	0.3974	0.3983	0.3300	0.3651	0.3827	0.3759	0.3707	0.3714
Median	0.3916	0.3768	0.3866	0.2985	0.3457	0.3742	0.3565	0.3506	0.3410
Standard deviation	0.1874	0.1828	0.1794	0.1700	0.1669	0.1751	0.1707	0.1802	0.1894
Number of observations	241	322	376	390	348	308	244	217	181
Capital exp./total assets									
Mean		0.0778	0.0816	0.0745	0.0771	0.0842	0.0627	0.0607	0.0620
Median		0.0420	0.0477	0.0365	0.0489	0.0565	0.0337	0.0313	0.0253
Standard deviation		0.0896	0.0877	0.0892	0.0858	0.0884	0.0789	0.0798	0.0888
Number of observations		241	321	377	344	307	243	216	179

	Year -3	Year -2	Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Inventories/total assets									
Mean	0.1847	0.1834	0.1735	0.1255	0.1341	0.1299	0.1330	0.1338	0.1342
Median	0.1770	0.1693	0.1657	0.1164	0.1239	0.1173	0.1181	0.1175	0.1145
Standard deviation	0.1188	0.1146	0.1122	0.0887	0.0901	0.0915	0.0919	0.0969	0.0994
Number of observations	241	322	376	390	348	308	244	217	181
Cash & securities/tot. assets									
Mean	0.0730	0.0882	0.0986	0.2347	0.1686	0.1496	0.1426	0.1457	0.1499
Median	0.0528	0.0590	0.0696	0.2329	0.1481	0.1256	0.1171	0.1183	0.1307
Standard deviation	0.0686	0.0861	0.0885	0.1323	0.1119	0.1050	0.1010	0.1033	0.1054
Number of observations	241	322	376	390	348	308	244	217	181

TABLE 4
Regression results for ROS

	Year 1		Year 2		Year 3		Year 4		Year 5	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel A: Determinants of ROS										
Intercept	0.3134	0.0418	0.1698	0.2486	0.1001	0.5084	–0.0354	0.8261	–0.0950	0.6045
% government shares	–0.0083	0.7229	0.0137	0.5078	0.0089	0.6674	–0.0242	0.2651	–0.0035	0.8945
% A shares	–0.0499	0.4521	–0.0228	0.7164	–0.0251	0.6251	–0.0663	0.2138	–0.0886	0.1059
Dummy for foreign owner	–0.0240	0.2303	–0.0397	0.0373	–0.0403	0.0440	–0.0468	0.0222	–0.0333	0.1279
Firm size	0.0012	0.8441	0.0071	0.2663	0.0075	0.2767	0.0110	0.0959	0.0100	0.1542
Leverage	–0.3467	0.0000	–0.3097	0.0000	–0.2444	0.0000	–0.2337	0.0000	–0.1444	0.0002
Financial debt/total debt	–0.0095	0.7133	–0.0217	0.3859	0.0128	0.6198	0.0390	0.1596	0.0013	0.9671
Short-term debt/total debt	–0.1053	0.0014	–0.1269	0.0002	–0.1182	0.0005	–0.1057	0.0054	–0.0556	0.1899
Fixed assets/total assets	–0.0024	0.9448	0.0132	0.7002	–0.0029	0.9327	0.0381	0.3012	0.0266	0.5195
Cash & securities/total assets	0.0082	0.8678	0.0519	0.2980	0.1579	0.0049	0.1407	0.0089	0.0694	0.2796
Dummy for regulated industry	0.1132	0.0000	0.0928	0.0000	0.0908	0.0003	0.0917	0.0002	0.0528	0.0688
Real GDP growth rate	0.6986	0.3256	0.5233	0.3380	0.3936	0.4453	1.0411	0.0303	1.4483	0.1829
Adjusted R-square		0.3284		0.3396		0.3400		0.3722		0.1586
Number of observations		341		301		237		215		178

	Year 1		Year 2		Year 3		Year 4		Year 5	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel B: Determinants of change in ROS										
Intercept	–0.1410	0.0804	0.0475	0.6070	–0.0984	0.3610	0.0649	0.5496	0.0188	0.9110
Ch. % government shares	0.0590	0.0267	0.0599	0.0229	0.0190	0.5702	0.0560	0.3155	–0.1293	0.1884
Ch. % A shares	0.0126	0.9005	–0.1759	0.2121	–0.0212	0.7022	–0.0926	0.5591	–0.1479	0.3039
Dummy for foreign owner	–0.0080	0.4725	–0.0038	0.7731	0.0024	0.8650	–0.0021	0.8755	0.0165	0.3326
Firm size	0.0050	0.1700	–0.0017	0.6961	0.0029	0.5791	–0.0052	0.2881	–0.0016	0.8113
Ch. leverage	–0.0573	0.1199	–0.1202	0.0042	–0.1454	0.0016	–0.0629	0.1595	–0.1822	0.0046
Ch. financial debt/total debt	–0.0088	0.6680	–0.0055	0.8199	–0.0533	0.0670	–0.0169	0.5672	0.0021	0.9592
Ch. short-term debt/total debt	–0.0209	0.4104	0.0241	0.4779	0.0738	0.0741	–0.0475	0.2123	–0.0717	0.1732
Ch. fixed assets/total assets	–0.0491	0.2385	–0.0206	0.6657	–0.0250	0.6777	0.0507	0.3146	0.1069	0.1729
Ch. cash & securities/total assets	–0.0339	0.3835	0.1294	0.0053	0.0558	0.2996	0.1086	0.0207	0.0725	0.3372
Dummy for regulated industry	0.0160	0.2464	–0.0281	0.1007	0.0064	0.7496	0.0045	0.8097	–0.0443	0.0970
Real GDP growth rate	0.5127	0.2553	–0.4231	0.3303	0.3221	0.4571	0.4837	0.1960	0.0377	0.9739
Adjusted R-square		0.0096		0.0789		0.0858		0.0325		0.0729
Number of observations		333		299		236		209		175

TABLE 5
Regression results for ROA

	Year 1		Year 2		Year 3		Year 4		Year 5	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel A: Determinants of ROA										
Intercept	0.1687	0.0034	0.0200	0.7108	0.0034	0.9574	–0.1591	0.0073	–0.0669	0.3297
% government shares	–0.0047	0.5868	0.0068	0.3672	–0.0013	0.8774	–0.0121	0.1288	–0.0137	0.1745
% A shares	–0.0635	0.0106	–0.0084	0.7163	–0.0068	0.7525	–0.0114	0.5563	–0.0329	0.1180
Dummy for foreign owner	–0.0169	0.0238	–0.0131	0.0623	–0.0160	0.0565	–0.0184	0.0138	–0.0169	0.0465
Firm size	–0.0026	0.2694	0.0029	0.2138	0.0037	0.1958	0.0078	0.0014	0.0045	0.0922
Leverage	–0.0884	0.0000	–0.0948	0.0000	–0.0808	0.0000	–0.0615	0.0000	–0.0276	0.0611
Financial debt/total debt	–0.0297	0.0022	–0.0204	0.0269	–0.0171	0.1119	–0.0073	0.4676	–0.0307	0.0103
Short-term debt/total debt	0.0144	0.2400	0.0108	0.3815	0.0017	0.9049	0.0170	0.2172	0.0031	0.8497
Fixed assets/total assets	0.0207	0.1181	0.0173	0.1696	0.0189	0.1845	0.0337	0.0126	0.0111	0.4853
Cash & securities/total assets	0.0003	0.9883	0.0290	0.1130	0.0676	0.0039	0.0635	0.0013	0.0753	0.0023
Dummy for regulated industry	0.0115	0.1736	0.0145	0.0777	0.0069	0.5075	0.0165	0.0636	0.0089	0.4270
Real GDP growth rate	–0.0109	0.9671	0.0026	0.9896	–0.0931	0.6661	0.5742	0.0012	0.5539	0.1884
Adjusted R-square		0.2470		0.3020		0.2610		0.3128		0.1682
Number of observations		343		303		239		215		180

	Year 1		Year 2		Year 3		Year 4		Year 5	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel B: Determinants of change in ROA										
Intercept	–0.0506	0.1552	0.0209	0.5893	0.0203	0.6632	0.0196	0.6129	0.1134	0.1084
Ch. % government shares	0.0033	0.7788	0.0212	0.0558	–0.0041	0.7769	0.0581	0.0039	–0.0431	0.2081
Ch. % A shares	–0.0652	0.1421	–0.1438	0.0159	–0.0088	0.7156	–0.0156	0.7835	–0.0694	0.2559
Dummy for foreign owner	–0.0061	0.2173	0.0023	0.6762	0.0012	0.8430	0.0037	0.4271	0.0089	0.2229
Firm size	0.0022	0.1772	–0.0009	0.6128	–0.0012	0.5906	–0.0015	0.3976	–0.0041	0.1356
Ch. leverage	–0.0637	0.0001	–0.0419	0.0175	–0.0765	0.0001	–0.0300	0.0609	–0.1184	0.0000
Ch. financial debt/total debt	–0.0101	0.2649	–0.0167	0.1034	–0.0300	0.0179	–0.0295	0.0058	–0.0244	0.1657
Ch. short-term debt/total debt	–0.0047	0.6748	–0.0006	0.9660	0.0414	0.0209	–0.0107	0.4298	–0.0205	0.3630
Ch. fixed assets/total assets	–0.0293	0.1113	–0.0122	0.5421	–0.0259	0.3210	0.0379	0.0362	–0.0426	0.1989
Ch. cash & securities/total assets	–0.0471	0.0063	–0.0033	0.8671	–0.0464	0.0477	0.0554	0.0010	0.0211	0.5148
Dummy for regulated industry	0.0022	0.7237	–0.0005	0.9410	0.0022	0.8008	0.0145	0.0303	–0.0120	0.2924
Real GDP growth rate	0.0550	0.7822	–0.1970	0.2815	–0.0265	0.8881	0.0442	0.7398	–0.4732	0.3376
Adjusted R-square		0.0492		0.0413		0.1450		0.1218		0.1526
Number of observations		335		302		238		211		177

TABLE 6
Regression results for ROE

	Year 1		Year 2		Year 3		Year 4		Year 5	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel A: Determinants of ROE										
Intercept	0.2232	0.0499	0.0069	0.9479	–0.0712	0.5387	–0.0055	0.9683	–0.0647	0.7016
% government shares	–0.0080	0.6452	0.0141	0.3382	0.0000	0.9979	0.0139	0.4560	–0.0083	0.7387
% A shares	–0.1050	0.0328	–0.0126	0.7791	–0.0136	0.7291	–0.0149	0.7447	–0.0338	0.5142
Dummy for foreign owner	–0.0266	0.0725	–0.0277	0.0430	–0.0331	0.0308	–0.0292	0.0952	–0.0298	0.1542
Firm size	–0.0062	0.1853	0.0042	0.3579	0.0077	0.1412	–0.0027	0.6360	0.0013	0.8378
Leverage	0.0245	0.3834	–0.0309	0.2422	–0.0194	0.4679	0.0821	0.0047	0.1360	0.0002
Financial debt/total debt	–0.0421	0.0279	–0.0356	0.0476	–0.0203	0.3037	–0.0240	0.3119	–0.0703	0.0171
Short-term debt/total debt	0.0335	0.1676	0.0116	0.6300	0.0071	0.7791	0.0396	0.2218	0.0317	0.4323
Fixed assets/total assets	0.0402	0.1255	0.0304	0.2138	0.0238	0.3623	0.0646	0.0420	0.0290	0.4603
Cash & securities/total assets	0.0089	0.8061	0.0477	0.1794	0.1115	0.0091	0.0868	0.0592	0.1081	0.0735
Dummy for regulated industry	0.0327	0.0517	0.0294	0.0656	0.0106	0.5799	0.0282	0.1758	0.0175	0.5244
Real GDP growth rate	0.1820	0.7296	–0.0847	0.8283	–0.2370	0.5486	0.6296	0.1261	0.6930	0.5038
Adjusted R-square		0.0344		0.0687		0.0591		0.0463		0.0678
Number of observations		343		303		239		215		180

Year 1	Year 2		Year 3		Year 4		Year 5			
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Panel B: Determinants of change in ROE										
Intercept	–0.0575	0.4097	0.0562	0.4737	0.0676	0.4558	0.4244	0.0004	0.1858	0.1975
Ch. % government shares	–0.0021	0.9276	0.0309	0.1667	–0.0046	0.8714	0.0986	0.1044	–0.1005	0.1511
Ch. % A shares	–0.0930	0.2849	–0.3136	0.0094	–0.0207	0.6578	0.0319	0.8530	–0.0770	0.5365
Dummy for foreign owner	–0.0094	0.3308	–0.0002	0.9880	0.0062	0.6048	0.0083	0.5620	0.0125	0.4004
Firm size	0.0023	0.4578	–0.0030	0.4074	–0.0034	0.4284	–0.0188	0.0005	–0.0063	0.2692
Ch. leverage	0.0553	0.0825	0.0981	0.0061	0.0202	0.5987	0.0840	0.0836	0.0346	0.5325
Ch. financial debt/total debt	–0.0119	0.5013	–0.0211	0.3095	–0.0432	0.0791	–0.0303	0.3454	–0.0640	0.0755
Ch. short-term debt/total debt	–0.0104	0.6357	–0.0063	0.8269	0.0985	0.0049	–0.0036	0.9309	–0.0492	0.2843
Ch. fixed assets/total assets	–0.0388	0.2816	–0.0040	0.9207	–0.0385	0.4486	0.1645	0.0029	–0.0742	0.2735
Ch. cash & securities/total assets	–0.0651	0.0534	0.0033	0.9325	–0.0783	0.0853	0.1081	0.0337	0.0623	0.3462
Dummy for regulated industry	0.0100	0.4025	–0.0088	0.5466	–0.0088	0.6020	0.0260	0.2001	–0.0197	0.3975
Real GDP growth rate	0.0746	0.8482	–0.2017	0.5854	–0.1240	0.7346	–0.5456	0.1780	–0.9509	0.3458
Adjusted R-square		0.0036		0.0387		0.0462		0.1035		0.0082
Number of observations		335		302		238		211		177

cial debt/total debt, *shortdebt* is short-term debt/total debt, *fixassets* is fixed assets/total assets, *cash* is cash & marketable securities/total assets, *regulated* is a dummy for regulated industries such as utilities, and *GDP* is the real GDP growth rate. Including the real GDP growth rate should allow us to control for privatization timing, so that we do not confuse performance improvements with favorable economic conditions. Previous studies usually had only a limited scope of control variables for firm-specific factors, which, to some extent, might have concealed the real forces behind any performance changes. A Δ in one of the above variables indicates a change in this variable.

As far as the impact of different types of ownership on ROS is concerned, the percentage of government ownership cannot explain performance differences across firms since the coefficient of this variable is not significantly different from zero in each post-privatization year. Surprisingly, the regressions explaining changes in ROS indicate that a large decrease in government ownership as of privatization negatively affects performance, especially in the early years after the event. When we replace state ownership by institutional (legal persons) ownership, we find that the latter variable is not related to absolute performance, but that large increases in institutional ownership as of privatization negatively affect ROS in years 1 and 2, but positively affect ROS in year 5.

These results thus suggest that a large decrease in state ownership at privatization is not beneficial to a firm, but may pay in the longer run. The percentage of A shares does not affect ROS and changes in this percentage are not related to changes in ROS. However, we do find that retail ownership is significantly negatively related to ROA and ROE in the first year and that changes in this variable are significantly negatively related to the changes in ROA, respectively ROE in year 2 after privatization, which support our earlier conclusion. Finally, the coefficient of the foreign ownership dummy variable is negative and significant in years 2, 3 and 4; this variable does not explain changes in ROS, however. Overall, our results deviate from the earlier literature on Chinese privatizations, which has generally confirmed that state shareholdings have a detrimental effect on financial performance whereas institutional investors are beneficial. These differences may be due to our study focusing on more recent, partial privatizations and examining performance changes over different post-privatization years. Also, the positive relation between changes in government ownership and changes in ROS in the early post-privatization years may be caused by the

decision of the government to divest shares in firms with limited profitability prospects, which calls for future research on this topic.

As for the firm-specific factors, we find that larger firms generally show better ROS figures, especially in the later years. Firm size, however, does not bear any relation with performance changes. We find strong evidence that firms with a high debt ratio show relatively low ROS. Also, the relation between the change in leverage and the change in ROS is negative and significantly so in most of the years. Next, the percentage of financial debt is not related to ROS, while it negatively impacts ROA and ROE in most years. The same conclusions hold for the regressions that explain performance changes. Interestingly, the percentage of short-term debt has a significantly negative impact on ROS during each year, except for year 5. Further research is needed to examine the causality behind these relations. Finally, we find evidence that capital intensity does not affect performance whereas firms with high cash holdings show somewhat better performance. Specifically, the percentage of cash is positively related to ROS in all years and significantly so in years 3 and 4. Similar conclusions hold when examining the relation between changes in cash and changes in ROS. Our earlier remark on causality also holds in this case.

Firms in regulated industries show better ROS figures; this industry feature however only explains absolute performance as it is not significantly related to changes in ROS. While it is useful to control for the variation in economic conditions, the real GDP growth rate generally is not significant in explaining post-privatization performance, even though this variable has the expected positive sign. Overall, our results show that it is much easier to explain absolute performance rather than performance changes using the explanatory variables in our model.

VI. CONCLUSIONS

Studies on privatization in developed and developing countries so far have answered important questions, such as why to privatize and how to privatize. Also, there is a huge literature on the post-privatization performance of newly privatized firms.

In practice, the objectives of launching a privatization program usually include raising revenues for the state, promoting wider share ownership, reducing the government's interference in the economy,

stimulating economic efficiency and introducing competition to subject SOEs to market discipline. From a theoretical point of view, privatization can mitigate agency problems of equity when the real owners of the SOE's assets are unable to write complete contracts with the firm or monitor it. Also, privatization can promote efficiency when the privatized firm is subject to market competition and hardened budget constraints. Finally, the entry of private ownership may reduce or deter costly government interventions. However, partial privatizations where the government keeps a stake in its SOEs might be beneficial as well. In countries where the markets for managerial labor and corporate control are not well developed, the government may be more efficient in monitoring the firm than other (small) investors. Also, the government stake can serve as a signal that it will not arbitrarily change its policies in the future. In the case of China, it turns out that partial privatizations are quite important and that the government retains a large stake in most firms, even up to five years after privatization.

The most frequently used privatization method is to sell state property via a SIP or through a direct asset sale. Specific privatization terms in SIPs, such as the percentage of shares divested, underpricing and share allocation, are interrelated decisions that are largely determined by the government's priorities in achieving various economic and political objectives. Unfortunately, no study has yet examined the Chinese government's choice between a SIP and a direct asset sale and the determinants of specific SIP-terms, except for underpricing. Studies on SIPs (and IPOs) in China have revealed that underpricing is largely determined by institutional factors, such as the fairly long time period between offering and listing, the CSRC control on the number of shares that can be listed and the geographic distribution of share issue quotas by CSRC.

Next, empirical studies on the performance of newly privatized firms generally indicate that privatization has a positive impact on the operating and financial performance of state-owned enterprises worldwide. China, however, is an exception, which usually is attributed to the fact that most privatizations are partial ones. After implementing a preliminary descriptive analysis as well as a multivariate analysis on a sample of 429 non-financial firms that experience partial privatization over the period 1994-2002, we do not find evidence that government ownership has a significant impact on post-privatization performance. By contrast, we find that large reductions in the percentage of shares owned by the state negatively impact performance during the

first few years after privatization; these results tend to reverse in the later years. Other types of shareholders, such as retail and foreign investors, play a negative – if any – role. As a result, we believe that exploring the determinants of underperformance in Chinese privatized companies is more complicated than simply deciding whether government ownership is good or not. One reason is that little is known about the underlying forces that determine the divestment of shares by the government in Chinese SOEs. A study on the unique and gradual reform of SOEs in China therefore may be able to provide new and fresh perspectives for the literature on privatization as well as the literature on corporate governance.

NOTES

1. These policies will be discussed in Section IV.C of this paper.
2. For listed companies on the Shanghai stock exchange, the average debt ratio of most former SOEs still exceeds 50% in 2002 (own calculations). Also, according to estimates of Standard and Poor's and official statements by the Chinese government, bad loans account for more than 20% of outstanding bank loans at the four largest state-owned banks by the end of 2003.
3. More details on the privatization of small SOEs can be found in Cao *et al*. (1999). By 1996, about 70% of small SOEs have been privatized in the provinces that first initiated a privatization program whereas more than 50% have been privatized in many other provinces.
4. Although the state shareholder and the other shareholders enjoy the same rights according to Chinese law, the state shareholder sometimes can choose between a cash dividend and a stock dividend whereas the other shareholders have to content themselves with stock dividends.
5. Domestic institutions include holding companies, non-bank financial institutions, and SOEs that have at least one non-state owner (Xu and Wang (1997)). Legal persons can divest their stake by transferring it to other companies through a private negotiation.
6. It is required that A shares account for at least 25% of total outstanding shares when a company goes public.
7. Since 2002, the Chinese government has started to collect information on feasible plans that could make state shares tradable. The expectation that a huge number of state shares may circulate in the future has sent share prices on the Shanghai and Shenzhen stock exchanges to a historical low since then.
8. Chen *et al.* (2001) analyze this phenomenon in more detail using panel data on 68 firms that have both A and B shares outstanding over the period 1992-1997. They conclude that the price discount is mainly due to the illiquidity of the B shares. As a result, foreign investors require a higher return in order to be compensated for the lower liquidity and the higher transaction costs on the B-share market.
9. The restrictions on foreign capital have been loosened since 2002, but as described in Section IV.C, the government is still selective about industries into which foreign investors are allowed to enter.
10. Foreign investors are regarded as politically less important in the sense that these investors usually are not the group the government targets to obtain political support for the privatization.

11. Also, A and B shares usually are issued at different prices.
12. In their sample, this period averages to 238 days for A-share IPOs and 20 days for B-share IPOs.
13. Boubakri and Cosset use crude accounting performance measures and measures adjusted for market effects and the possibility of a pre-privatization debt restructuring.
14. The sum of the squared percentage of shares held by each of the top-10 shareholders.
15. Sun and Tong (2003) argue that because of the change in Chinese accounting practices in 1993, there is a problem of incomparability when examining accounting measures on a sample that includes firms before and after 1993.
16. Since the corporate bond market is almost non-existent in China, bank loans are the most viable source of debt financing for most firms.
17. We indeed find that the explanatory power of the model examining ROS is much higher than that explaining ROA and ROE. However, we find that our general conclusions from examining ROS also largely extend to the other performance measures.
18. The correlation between government and institutional ownership was as high as -0.89; therefore both variables could not be included in the same model. We find that pairwise correlations among other explanatory variables never exceed 0.6. So multicollinearity is unlikely to be a problem in our study.

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